

# Pertinent facts

## ABOUT DROWNINGS AND OTHER WATER-RELATED DEATHS

# in Québec



## Foreword

The Secrétariat au loisir et au sport, the Canadian Red Cross (Québec Division) and the Lifesaving Society have joined forces to study the data on drowning and other water-related deaths in Québec. This data is taken from the files of Québec's Bureau du coroner. Because of the time it takes to publish coroners' reports and to gather and record data, the statistics regarding these deaths are published two years after the last year included in the study. This document presents, therefore, the pertinent facts taken from the study on drownings and other water-related deaths in Québec from 1991 to 1999.



## Overview

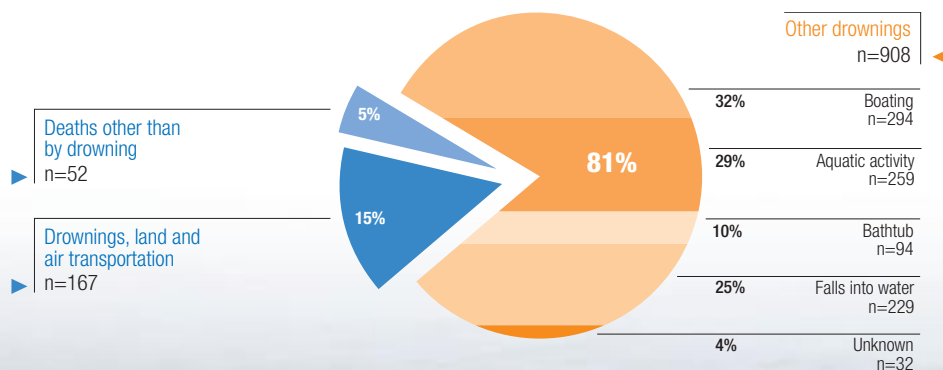
According to the data provided by Québec's Institut national de santé publique (INSPQ), drowning is the 4th most common cause of death by non-intentional injury in Québec after highway deaths, falls and poisoning. Drowning is a major preoccupation for those involved in the field of recreational and sporting activities because it is the leading cause of death in this field, ahead of fatal injuries associated with cycling.

**Each year, there are, unfortunately, some 125 water-related deaths in Québec, most of which are drownings** in comparison with other deaths caused by injuries other than drowning. This average prevailed during the 1991—1999 period: 1,127 individuals died during a boating- or swimming- related activity, from a fall into the water or in other recreational, daily or professional circumstances (Figure 1).



figure 1

Water-related deaths according to type of injury and activity, Québec, 1991—1999 (n=1,127)





## SLIGHT DECREASE IN THE NUMBER OF WATER-RELATED DEATHS

The study covering these years shows that the average death rates per 3-year age group decreased during the 1997—1999 period, after having risen slightly during the second 3-year period covered by the study (Figure 2). In spite of the fact that the number of victims remains steady for certain kinds of activities, there is a notable drop for swimming (Figure 3).

figure 2

### Rate and number of drownings and other water-related deaths, Québec, 1991—1999 (n=1,127)

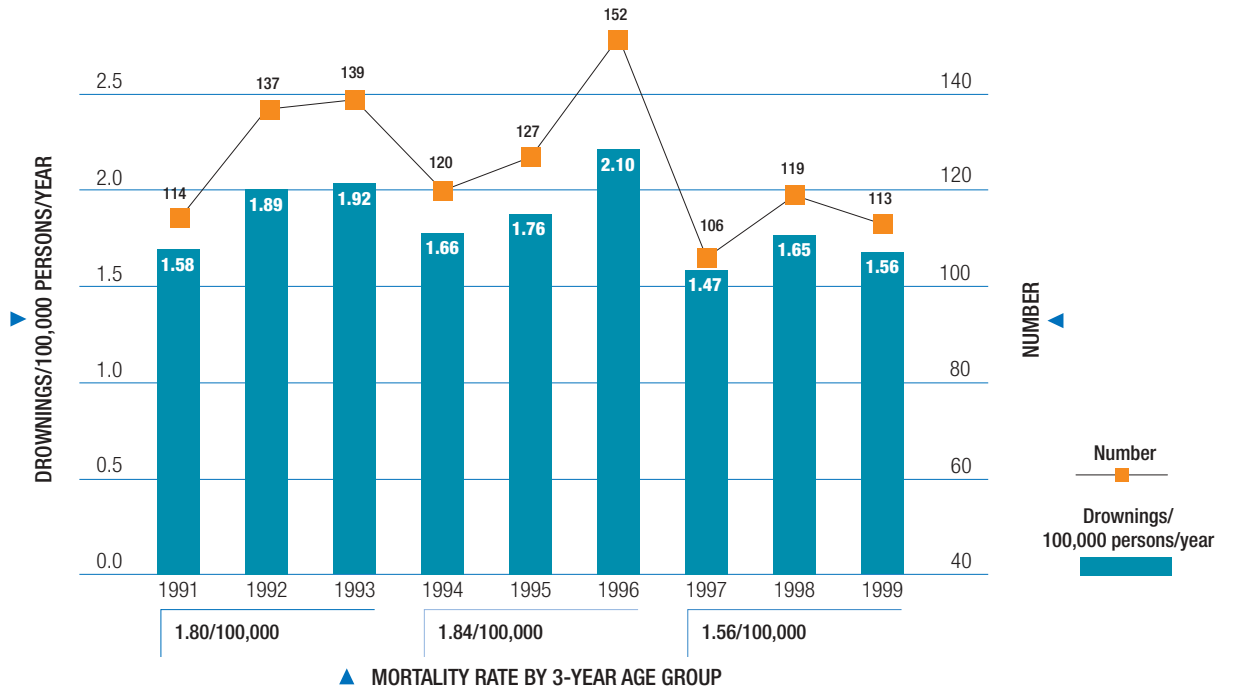


figure 3



### Activities responsible for the greatest number of water-related deaths,\* Québec, 1991—1999 (by 3-year age groups)

\* Includes drowning and other water-related deaths except those linked to surface or air transportation other than snowmobiling.

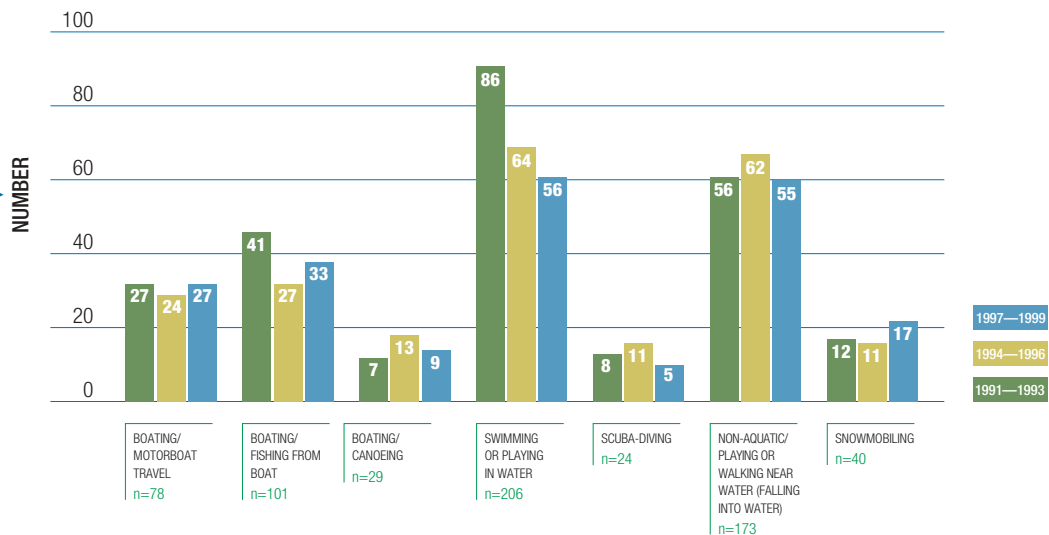




figure 4

## SIGNIFICANT RELATIONSHIP BETWEEN RECREATIONAL ACTIVITIES AND NUMBER OF DROWNINGS

Number of drownings by activity,\* according to purpose of activity, Québec, 1991—1999 (n=820)

\* Only includes the major activities studied.

† Falls into water.

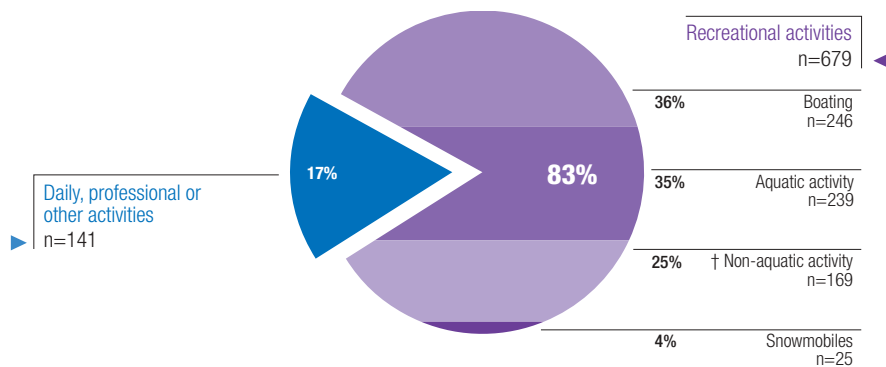


figure 5

## QUÉBEC AND OTHER REGIONS OF CANADA

Death rate by drowning† according to region in Canada, 1991—1999

† Includes drownings related to recreational, professional

and daily activities, except those linked to surface or air transportation.

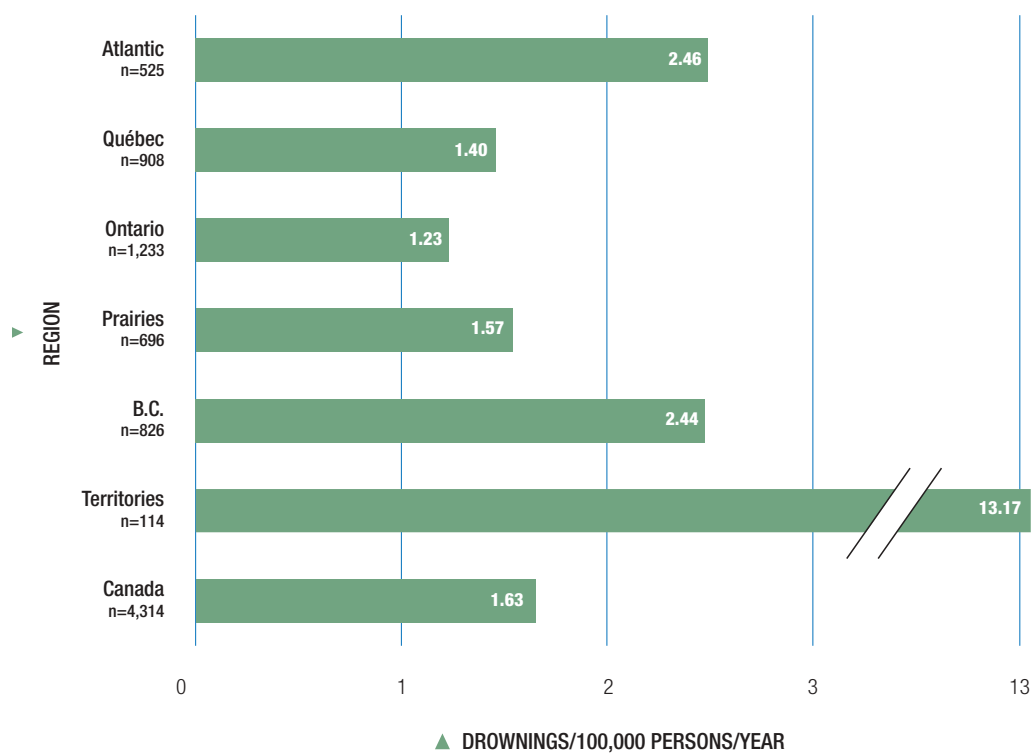


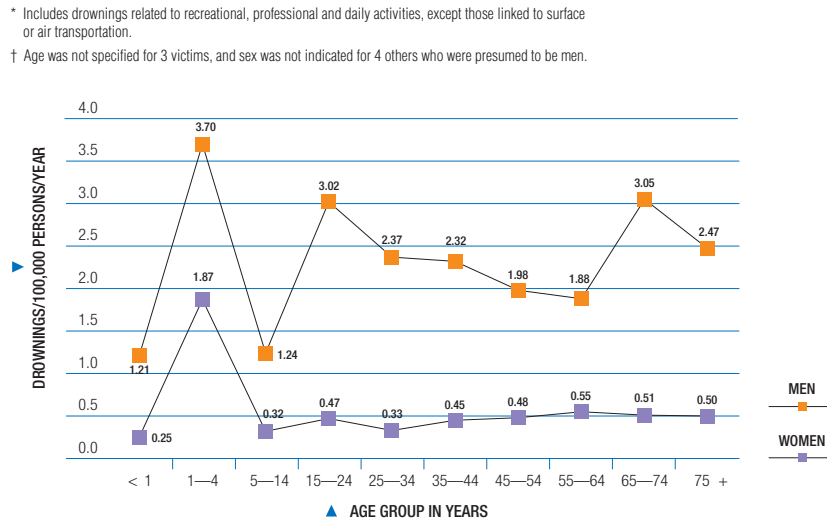


figure 6

## SMALL CHILDREN, YOUNG MEN AND THE ELDERLY: THE MOST VULNERABLE

Most drowning victims are men or boys (81%). Children between the ages of 1 and 4, young men between the ages of 15 and 24 and seniors between 65 and 74 have the highest rate of death by drowning in comparison with other segments of the population (Figure 6).

Rate and number of deaths by drowning\* according to age and sex, Québec, 1991–1999 (n=908; 742 men and 166 women)†



NUMBER OF DROWNINGS BY AGE GROUP

MEN	5	60	53	136	125	130	85	55	63	27
WOMEN	1	29	13	20	17	25	21	17	13	10



## WHERE DO MOST DEATHS OCCUR AND WHO ARE THE VICTIMS?

The largest number of deaths occurs in Montérégie. Moreover, even if the number of deaths is not large in Montréal, residents of Montréal and the Montérégie region make up the largest number of victims. However, if we consider the death rate per 100,000 persons, it is clearly evident that the residents of the Nord-du-Québec and the Côte-Nord are affected most by these deaths (Figure 7). It is possible that daily activities such as fishing, hunting and transportation by boat or snowmobile place the residents of these regions at greater risk and explain the significant variation in their water-related death rate in comparison with the rate for other regions.

figure 7

Number of water-related deaths according to region of death and victim origin, 1991–1999 (n=1,127)

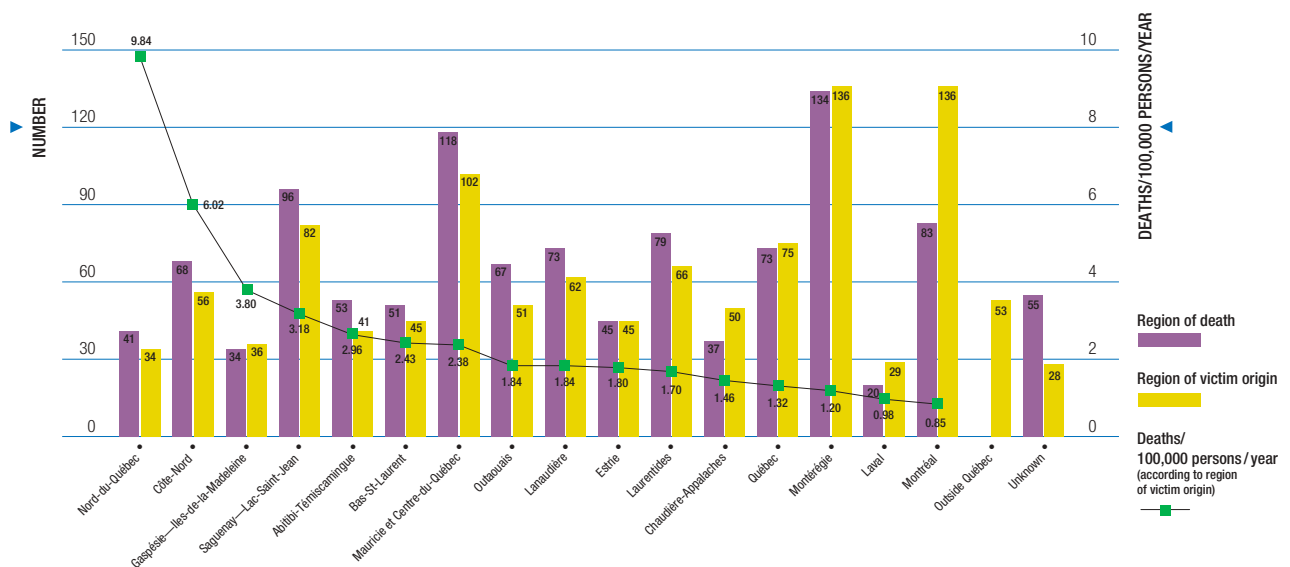




figure 8

## DROWNINGS IN RIVERS AND LAKES

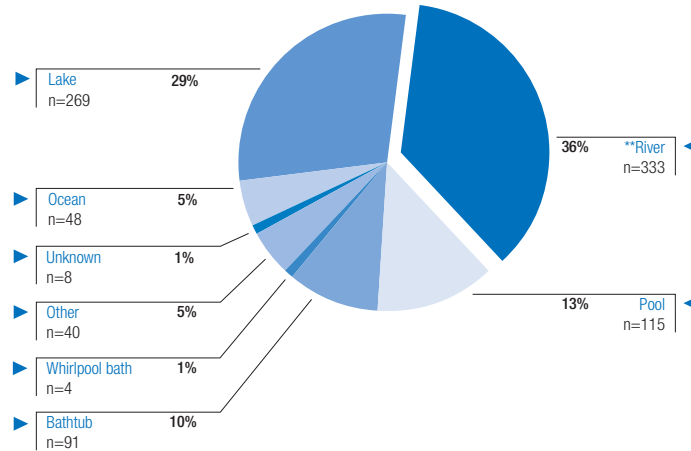
Compared to other Canadian provinces, Québec has a higher proportion of drownings in rivers. The large proportion of drownings in lakes in Québec should also be noted (Figure 8).

### Drownings\* according to type of body of water,† Québec, 1991—1999 (n=908)

\* Includes drownings related to recreational, professional and daily activities, except those linked to surface or air transportation.

† "Lake" includes pond and reservoir.

\*\* The St. Lawrence River is considered to be a river as far as Sept-Îles. Further downstream, deaths are classified in the ocean category.



## BOATING: fewer drownings, but the same risk factors

Even though the boat-building industry cites an increase in boat sales during the 1990s, the number of drownings has decreased from 109 for the 1991—1993 period, to 97 for the 1994—1996 period and to 88 for the 1997—1999 period. In spite of this decrease in the number of victims, 30 drownings per year could be avoided through the application of simple boating safety measures. It is important to note that recreational boating is responsible for most boating-related drownings (246/294).

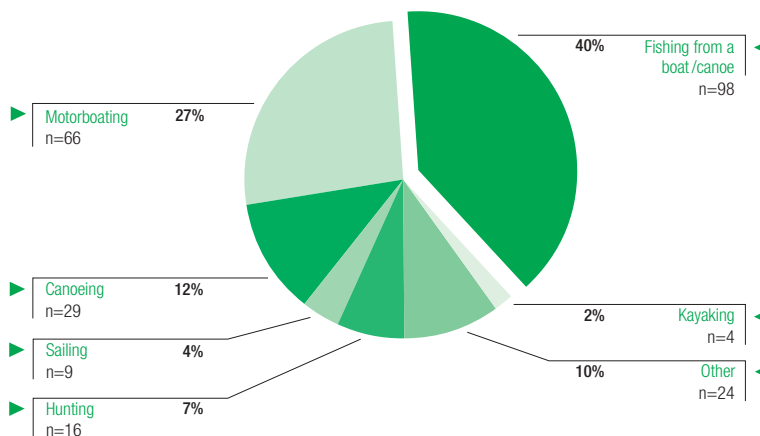


figure 9

## TYPICAL VICTIM PROFILE

A typical scenario of a boat-related drowning involves a 50-year-old man carrying no personal flotation device (PFD) while fishing from a small motorboat on a lake. His boat is capsized by choppy water and strong wind.

### Drownings related to recreational boating according to activity, Québec, 1991—1999 (n=246)





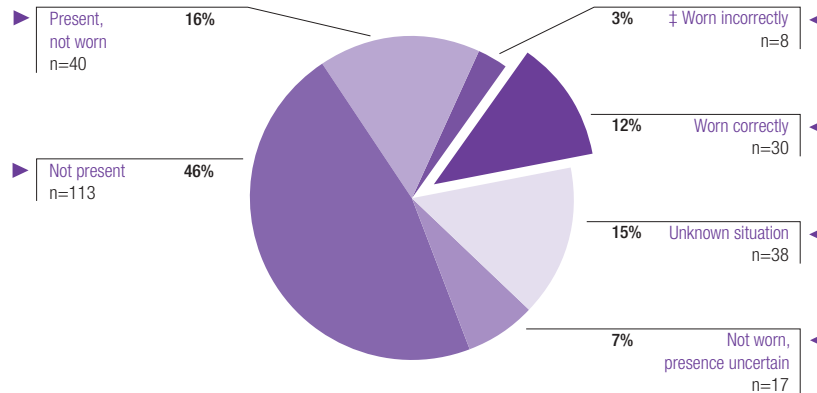
## BOAT USERS ARE STILL NOT WEARING THEIR PFDs

In spite of repeated advertising campaigns promoting the use of PFDs and recommendations by coroners and other drowning-prevention stakeholders, boat operators and their passengers are still ignoring this basic precaution. **Of all the recreational-boating drowning victims, only 12% were wearing a PFD the proper way** (Figure 10). One would think that non-swimmers using small motorboats would be more likely to wear a PFD in the correct manner, but this was the case in only 10% of the drownings reported.

figure 10

### Drownings related to recreational boating according to use of flotation device,\* Québec, 1991—1999 (n=246)

\* Personal flotation device (PFD) or life jacket  
 ‡ Untied or wrong size



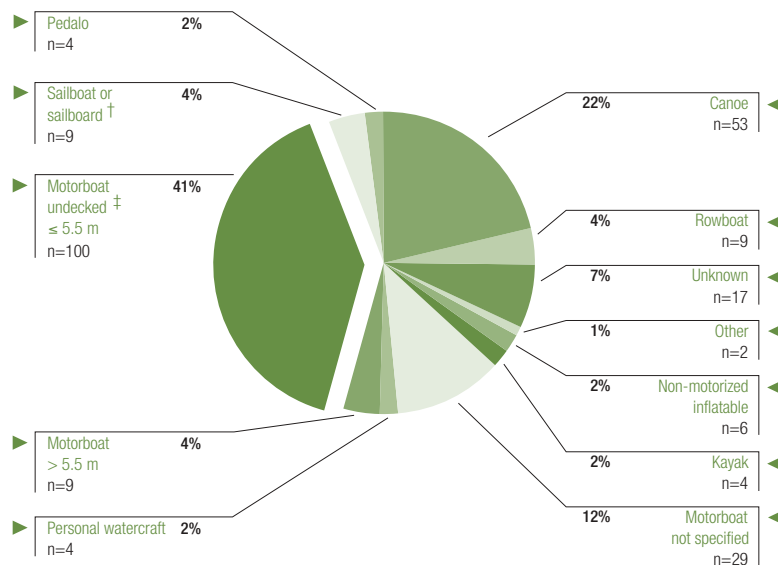
## SMALL MOTORBOATS AND CANOES: MOST FREQUENTLY INVOLVED

Small motorboats are the predominant type of boat involved in drowning accidents (Figure 11). Although the statistics for canoes are lower, canoes are also responsible for a significant number of drowning victims. Most drowning accidents involving boaters occur in lakes (56%) and rivers (36%).

figure 11

### Drownings related to recreational boating according to type of boat, Québec, 1991—1999 (n=246)

† Includes 8 sailboats and 1 sailboard.  
 ‡ Includes open motorboats and motorboats including inflatables but excluding personal watercraft.



Deaths caused by an injury other than drowning are only responsible for 8% of boating-related deaths and present a very different picture as to the type of watercraft involved. When injuries resulting from collisions or other causes are involved, larger boats or personal watercraft are more likely to be involved.

## BOATS AND ALCOHOL: A RISKY MIXTURE

Of all recreational-boating drowning victims, 18% had an alcohol level above the legal limit. This is a conservative statistic since in 48% of the cases of boating-related drownings, the presence or absence of alcohol is not indicated.



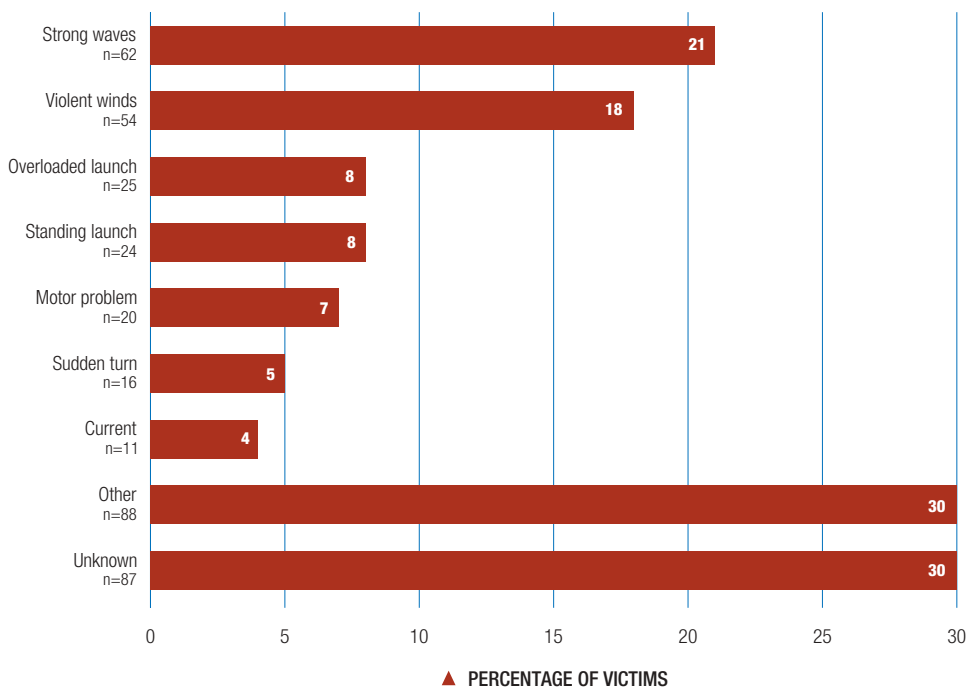
### BEWARE OF WIND AND COLD WATER!

Even though there are many drownings for which there is little information with regard to hypothermia and climatic conditions at the time of the accident, statistics reveal that boaters were often found in adverse conditions with violent winds and heavy waves (Figure 12). Boaters found themselves in cold or extremely cold water in 22% of the cases. Because of the lack of available information, the cases of hypothermia are probably underestimated (13% confirmed). It is interesting to observe that the cases of hypothermia occur mostly during the May—June and October—November periods that coincide with fishing and hunting seasons and a drop in the temperature of the water.

figure 12

Number and percentage of drownings while boating according to cause of incident,\* Québec, 1991—1999 (n=294)

\* There can be more than one cause per incident.



## AQUATIC ACTIVITIES: young men take risks while swimming

Among the drowning-related recreational aquatic activities, swimming, playing and splashing around in the water are responsible for 86% of the deaths. Although scuba-diving incidents did not account for many victims in absolute numbers, it is responsible for a relatively high number of victims (24 altogether, 15 of whom were diving for recreational purposes and 9 were diving on the job), in relation to the number of active divers in Québec, which is estimated at up to 10,000 in total. This activity involves obvious risks and requires specific skills and the respect of unavoidable safety rules.

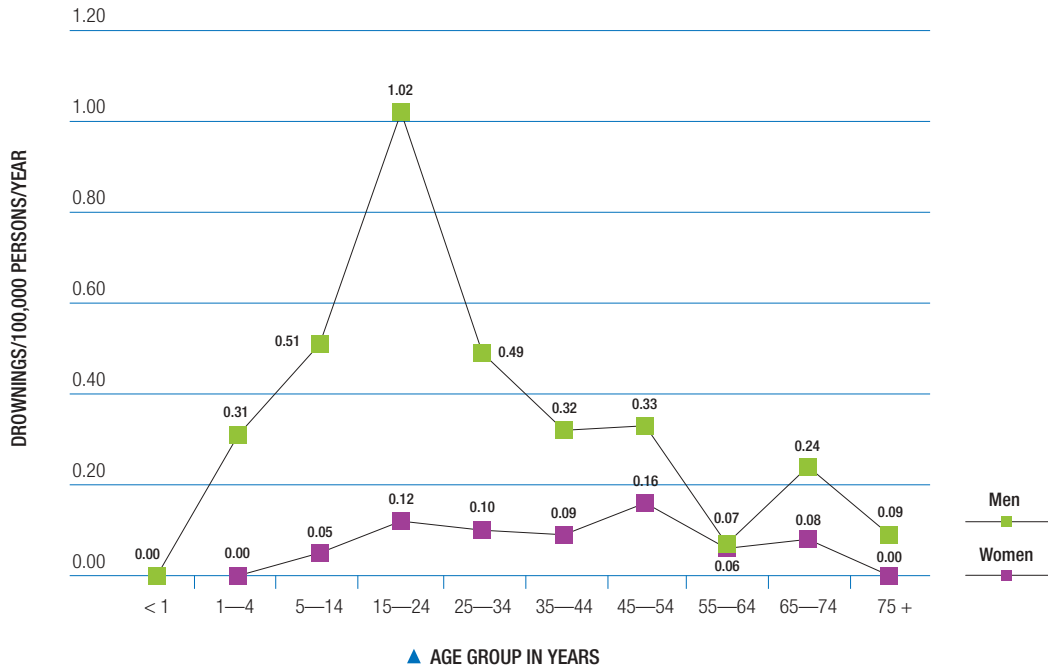
Swimming ranks as the third most popular physical activity with the population of Québec after walking and cycling. Approximately 22% of the population practise this activity. Although not inherently dangerous, swimming's popularity exposes swimmers to an appreciable risk of drowning. During the period covered by the study, there were 167 drowning deaths attributed to this activity. According to Figure 13, young men from 15 to 24 years of age were most likely to drown during this activity.

figure 13



**Rate and number of swimming-related drowning deaths according to age and sex, Québec, 1991—1999 (n=167: 139 men and 28 women)\***

\* Includes 1 victim whose sex was not known and 3 victims presumed to be men.



**NUMBER OF DROWNINGS ACCORDING TO AGE GROUP**

MEN	0	5	22	46	26	18	14	2	5	1
WOMEN	0	0	2	5	5	5	7	2	2	0

figure 14

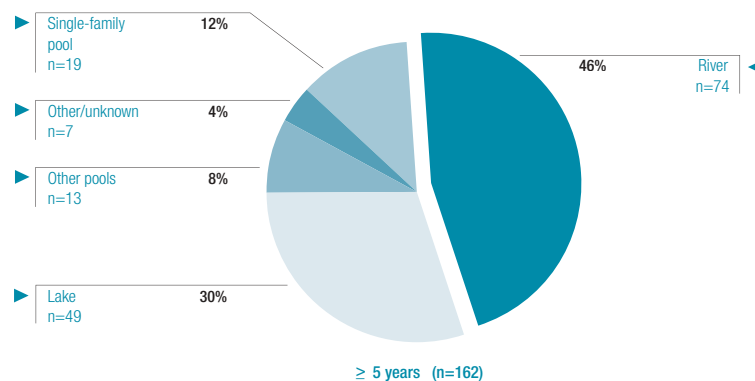
The significant number of swimmers who drown in rivers should also be noted (Figure 14). Although there are many unknown facts surrounding this category of drownings, statistics reveal that at least 58% of drownings related to swimming in rivers took place in rapids, white water or near waterfalls.



**Swimming-related drownings according to body of water,\* Québec, 1991—1999 (n=167)†**

\* "Lake" includes pond and reservoir.

† The total includes 5 victims between 1 and 4 years of age, but they are not included in the graph.



## AN APPRECIABLE NUMBER OF “SWIMMERS” DO NOT KNOW HOW TO SWIM

Although swimming lessons do not protect all swimmers from drowning, it is interesting to note that 42% of drowning victims between the ages of 5 and 14 did not know how to swim or were weak swimmers. It should also be noted that knowledge of swimming is not specified in 33% of the cases.

## SWIMMING AND ALCOHOL ARE NOT COMPATIBLE

As is the case with other boating- and water-related activities, swimming presents a higher risk when the consumption of alcohol is involved. At least 35% of victims 25 years of age and over who drowned while swimming had an alcohol level over the legal limit.

## SWIMMING ALONE INCREASES RISK

It is easy to understand that a swimmer in difficulty has a greater chance of survival if someone in the vicinity comes to his or her rescue. It is interesting to note that 32% of the drowning victims age 15 and over were alone when they drowned. There were no adults present in 37% of the cases of drownings involving children from 5 to 14 years of age.

## SMALL CHILDREN ARE DROWNING IN RESIDENTIAL POOLS, BUT THE STATISTICS ARE IMPROVING

A two-year-old child eludes an adult’s supervision, wanders out of the house onto the deck overlooking the above-ground pool and falls into the water while trying to reach a toy that has been left floating on the surface. This far-too-common scenario makes Québec the winner of this sad Canadian record for the drowning rate in residential pools. Québec’s rate is almost twice that of Ontario’s. Ontario is in second place. The situation is improving in Québec, however, since the drowning rate for children from 1 to 4 years of age in residential pools has dropped from 2.17/100,000 for the 1991—1993 period to 1.89/100,000 between 1994 and 1996 and to 1.23/100,000 for the 1997—1999 period.

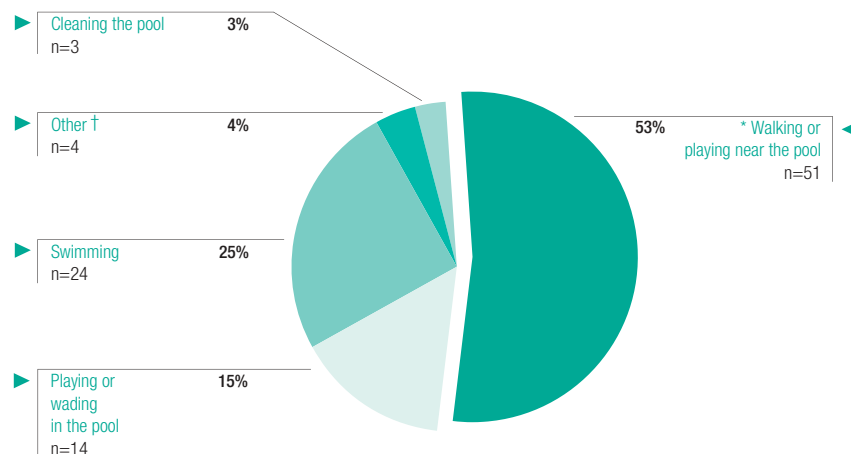
figure 15



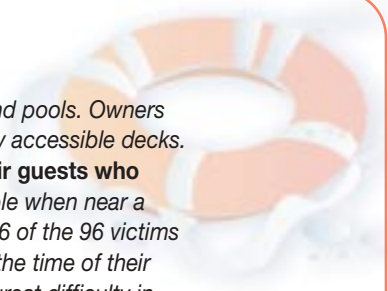
Drownings in single-family pools according to activity, Québec, 1991—1999 (n=96)

\* Falling into the pool.

† Includes raking leaves on the property (1), leaning against a deck railing that gave way (1), unknown (2).



Québec is known for its large number of aboveground swimming pools in comparison with in-ground pools. Owners often neglect to build fences to prevent access to these pools, which are often surrounded by easily accessible decks. **Even if there is a fence around the property, it is more likely to be the owners' children or their guests who drown in their own yard.** We also note that children from 1 to 4 years of age are the most vulnerable when near a body of water and they have the highest rate of drowning in residential pools. They accounted for 56 of the 96 victims between 1991 and 1999. It is significant to note that the great majority of the victims were alone at the time of their drowning. This data highlights the importance of keeping children within sight at all times, and the great difficulty in doing so. A moment or even a few seconds of inattention can be fatal. That explains why **a fence with a self-closing and self-locking gate is the most effective way to prevent a brief moment of inattention from turning into a tragedy.**



## THE FAMILY POOL: TOO EASILY ACCESSIBLE

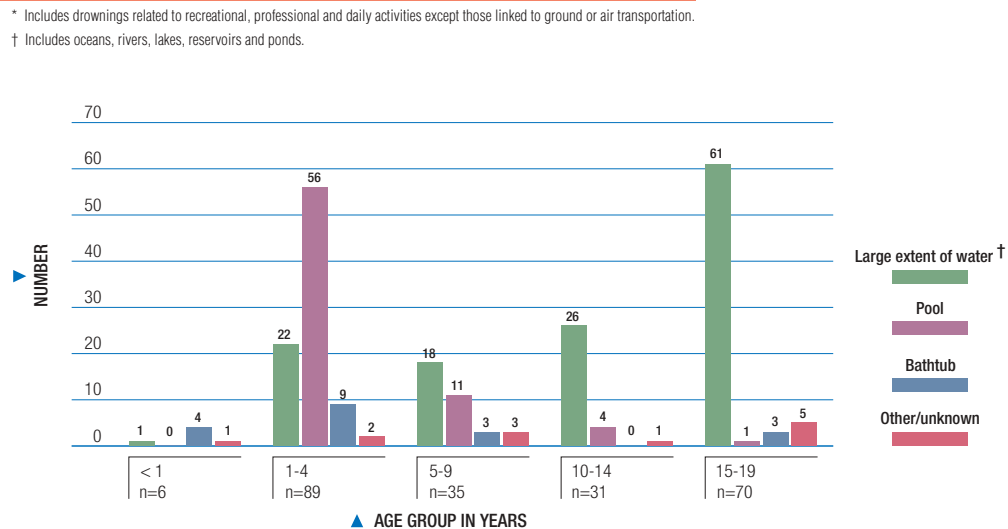
Given the young age of the victims of residential-pool drownings, it goes without saying that these deaths could easily be avoided by making pools less accessible to the very young. **Only 2% of drownings involving very young children happened in pools where a self-closing and self-locking gate had been installed.**



## WHERE DO CHILDREN AND ADOLESCENTS DROWN MOST FREQUENTLY?

**figure 16** Babies and young children drown most often in bathtubs and swimming pools respectively, whereas children over five years of age drown more frequently in large bodies of water (Figure 16).

**Drownings\* of children and adolescents according to age group and type of body of water, Québec, 1991—1999 (n=231)**



## DROWNING: A MAJOR RISK FOR EPILEPTICS

With a drowning rate of 20.4/100,000, individuals with epilepsy must be supervised carefully when they are on or in the water. About half of the deaths by drowning occur in the bathtub.



## NEAR-DROWNINGS: a major phenomenon

Since near-drownings can result in serious after-effects for the victim, such as permanent injuries, this phenomenon must be considered in our action prevention plan. Young children are most frequently involved in near-drownings. For example, after falling into the family pool, they are saved and resuscitated after being submerged for so long that the lack of oxygen has caused brain damage. According to the statistics of the Canadian Institute for Health Information, approximately 65 individuals are victims of a near-drowning every year. Of this total, half are less than 5 years old.

## ICE AND SNOWMOBILERS: watch out for holes in the ice and avoid travel after dark!

A wonderful snowmobile trip, a stop in the shelter for a few beers, and then back to the trail. A lake to cross at dusk... This is the typical scenario for tragedies that should have been easy to avoid. Over a period of 9 winters, 40 snowmobilers have drowned when their vehicles fell through a hole in the ice or broke through thin ice. Even though January is supposed to be the month when the ice is thickest, it is during this month that most drownings occur. Alcohol plays a role in these deaths as 26% of the victims had a blood-alcohol level above the legal limit.

## HOW TO AVOID ACCIDENTS AND HAVE MORE FUN!

### KNOW HOW TO NAVIGATE SAFELY

- 1) **Always wear your life jacket or your PFD.** Your PFD is not very useful to you if it is lying in the bottom of the boat. Once more, it is difficult to put it on in an emergency situation. For some activities that take place in the cold climatic conditions found in Québec, wearing isothermal clothing can prevent the risk of hypothermia.
- 2) **Know the basic rules and regulations of navigation.** Evidence of ability is now required for operators of motorized watercraft. What are the specific challenges of operating a personal watercraft, and what is the minimum age for operating one? Did you know that there is a minimum age associated with operating boats according to the size of their motors? The new regulations for the operators of motorboats have gradually been introduced since 1999. What equipment is compulsory for your boat? Drive at a reasonable rate of speed. A speed limit is prescribed by law for several Québec bodies of water. Order the *Safe Boating Guide* published by the Canadian Coast Guard (CCG) by dialling 1 800 267-6687 or visit their Web site at the following address: [www.ccg-gcc.gc.ca](http://www.ccg-gcc.gc.ca). Courses approved by the CCG are offered by the Lifesaving Society and the Canadian Red Cross.
- 3) **Avoid alcohol while boating.** Operating a boat while legally impaired is punishable in the same manner as driving a car while impaired. Operating a boat requires all of your attention and sense of responsibility. Abstinence is recommended for passengers as well as operators of watercraft.





## SWIM AND HAVE FUN IN THE WATER WITHOUT ANY DANGER!

**Learn how to swim. Do not go into the water alone.** Be wary of currents and white water. Check out the depth and possible hazards of the spot you want to dive into. Do not swim and consume alcohol at the same time.

## THE GATE IN THE FENCE AROUND THE POOL SHOULD BE SELF-CLOSING AND SELF-LOCKING

**Access to the swimming pool must be controlled by a fence equipped with a self-closing and self-locking mechanism.** Even if there is a fence surrounding the property, the danger remains when nothing prevents access to the pool from the house or from the yard. Remember that the majority of small victims drown in their own pools after briefly eluding the supervision of an adult.

## ALWAYS SUPERVISE YOUR YOUNG CHILDREN WHEN THEY ARE NEAR THE WATER

Whether you are at the lake or by a pool, if your young children are not within easy reach, you are too far away from them!

## BE CAREFUL OF ICE AND DARKNESS!

Make sure that the ice is sufficiently thick, particularly where the water flows out of the lake or on rivers, because the water current makes the ice thinnest at these locations. Remember, snowmobiling and alcohol do not mix!

## LEARN LIFESAVING AND FIRST AID

Find out what to do if you find an unconscious child in the swimming pool, what to do after capsizing your boat, or how to help a friend who is exhausted while trying to swim across a river. This knowledge will perhaps enable you to save someone's life, your own or someone else's. You will find suitable courses either at the Canadian Red Cross or the Lifesaving Society.

### FOR MORE INFORMATION:



Canadian  
Red Cross

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